

Title of Unit Plan: Plants and How They Survive in Their Environment

Author: Michelle Larson

Unit Context: 3rd Grade Small Group Reading Intervention

Unit Rationale:

My group consists of struggling readers. Simply decoding informational text is often difficult for them and gathering information as they read is something that they have rarely had success with. I wanted to provide a fun and interesting topic for my students to interact with while they were practicing their reading and understanding of informational text and decoding multisyllabic words. I wanted them to do some sort of research project, and I wanted them to write on something that they felt they were now an “expert” on. So, I chose plants and a science platform. Historically, our primary grades have had very little if any exposure to science, but our students love it. So, I chose to combine their reading and writing instruction into something they could enjoy. I also wanted them to begin to contemplate “SURVIVAL”. What does it mean to survive something? I hope to relate this to perseverance, their learning and lives, as well as draw attention to the fact that we live in a place where agriculture is a huge part of our economy and daily life.

Focus Standards being Explicitly Taught and Assessed

READING:

- **CCSS.ELA-Literacy.RI.3.1** Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
- **CCSS.ELA-Literacy.RI.3.3** Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.
- **CCSS.ELA-Literacy.FS.3.3** (*Informally Assessed as we have been working on this all year*)
Know and apply grade-level phonics and word analysis skills in decoding words.
 - a. Identify and know the meaning of the most common prefixes and derivational suffixes.
 - b. Decode words with common Latin suffixes.
 - c. Decode multisyllable words.

WRITING:

- **CCSS.ELA-Literacy.W.3.2** Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
- **CCSS.ELA-Literacy.W.3.7** Conduct short research projects that build knowledge about a topic.

SPEAKING & LISTENING:

- **CCSS.ELA-Literacy.SL.3.4** Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.

Measurable Objectives:

DOK 1:

- Students will ask and answer questions to demonstrate understanding of text.
- Students will dissect and identify the parts of a plant and their function.
- Students will draw and label the parts of a plant.
- Students will describe the life cycle of a plant.

DOK 2:

- Students will formulate questions to demonstrate understanding and refer explicitly to the text to answer questions.
- Students will conduct a plant experiment where they make observations, collect and record data.
- Students will define and use terms relating to cause and effect relationships within the plant life cycle and its environment.

DOK 3:

- Students will formulate a hypothesis and conduct an experiment to test it.
- Students will present the results of their experiment using language pertaining to cause and effect and cite evidence to support their conclusions.

DOK 4:

- Students will synthesize understanding of the texts and experiment results to write an informational brochure citing textual evidence to teach other students about their conclusions.

Unit Objectives:

- We will closely read text and answer questions to learn about plants.
- We will label the parts of a plant and describe their function.
- We will illustrate the life cycle of different types of plants.
- We will have discussions with a partner and as a class to understand the cause and effect relationships of plants and their environment.
- We will apply our knowledge of our informational text and make predictions to conduct a plant growing experiment.
- We will analyze our information and create a brochure to help our classmates grow a plant.
- We will present our findings as a scientist to teach our classmates about plants and their environment.

Unit Enduring Understandings Addressed:

Plants have a system of parts that work together to help it survive.

The life cycle of a plant changes depending on its needs and its environment.

All plants have certain needs for survival and maximum growth.

We write to record and share information and help other people.

Reading and Writing are an important part of scientific research.

Scientists follow a system of steps and procedures. (Scientific Method)

Unit Essential Questions Addressed

ESSENTIAL QUESTION - *What does it mean to survive?

Focus Questions to support EQ - *What needs does a plant have in order to survive in its environment?

*What can be done to maximize the growth of a plant?

Texts/Resources Recommended

Central Text: (Retyped and attached at bottom of unit plan)

Plants and Trees Growing by Kara Race-Moore

- ❖ Quantitative Measures
 - Lexile: 710L
 - 3rd Grade Science Text – On Level Reader
 - The Lexile score for this text falls is aligned with the CCR expectations according to Figure 3 on page 8 of Appendix A.
- ❖ Qualitative Measures
 - Single Level of Meaning and Explicitly Stated Purpose
 - The text is straightforward and scientific. There are not multiple levels of meaning or hidden purposes. However, the scientific content will be the struggle.

Scaffolds/Supports for Texts:

- Re-typed book into small sections
- Plant Parts - Vocabulary Book www.readinga-z.com
- Discovery Education Videos/Video Clips and Images
 - Closed-captioning on videos and Note catchers (pause at certain intervals)

Additional Materials Recommended

***Before unit begins** - Plant seeds to have plants ready for research project and plants for dissection. (Bean Plants)
Bean Seeds, Mustard Plants, Research Materials (salt, vinegar, etc.)
Diagram materials, labels, journals, note-catchers, chart paper, **Flip books**
Tree “cookies”, eye droppers, grow light
Computers for websites, research, and project

Key Vocabulary Terms: Content and Academic

Review –

ACADEMIC – label, illustrate, analyze, present, cause and effect

CONTENT - flowers, bud, stem, petals, leaf/leaves, fruit, seeds, peel, bean, soil, tree, trunk, branches, extinct, fossils

Explicitly Taught –

ACADEMIC – observations, brochure, evidence, observations

CONTENT – survive, system, hypothesis, environment, dissect, twig, pulp, veins, sprout, roots, heart, rings, pollinate, pollen, germinate, seed leaf, seedlings, deciduous, coniferous

Procedures

Time Frame	Sequenced Activities, including evidence of text-dependent questioning BEFORE UNIT START DATE – PLANT SEEDS FOR PLANTS TO BE MATURE FOR EXPERIMENT
5 weeks- 40 min. per day	<ul style="list-style-type: none"> Frontloading: Images and questioning about environment, plant needs and plant life cycles. KWL Chart Building Knowledge (I Do and We Do) *Week 1 and 2 – We read, discuss, answer questions, and write together as a group. ACTIVITIES: Modeling Close Reading Strategies of Text Illustrations and diagrams Videos and clips Experiment Plant Dissection Guided Practice (We Do and You Do Together) *Week 3 – We read with buddies, discuss information as a group, write answers to questions with a buddy and then discuss answers as a group. – <u>BEGIN PLANT EXPERIMENT</u> *Week 4 – We read independently, read as a group, discuss information with a buddy, write answers independently and then share with the group to generate more discussion. *Week – Experiment wrap up, cause and effect – modeling how to write brochure. ACTIVITIES: Close reading Lab notes Text dependent questions Website Video notes Student Groupings Whole group (8 students) Buddies Independent Independent Practice (You do alone) Weeks 4 and 5 – We will analyze our experiment, write our brochure and prepare our speech. ACTIVITIES: Lab Journal and results Website reviews Note taking Speech to class Plant brochure

Differentiation (based on principles of UDL):

Multiple Modes of Representation: Already small differentiated group

- Images (Visual)
- Videos (Visual)
- Shorter Text (text length broken up - Visual)
- Group Discussion (Auditory)
- Plant Dissection (Kinesthetic)

Multiple Modes of Expression

- Discussion (Informal speaking)
- Lab Notes/Journaling (short writing)
- Group talking & answering text dependent questions (short writing and informal speaking)
- RAFT (formal speaking)

Multiple Means of Engagement

- Choice of experimental factors – changes to plant needs
- RAFT/brochure for culminating activity and speech to be resident expert in homeroom classroom.

Scaffolds and Supports for Learners: The group that I am teaching this to is a group of 3rd grade struggling readers with 3 ELL students and one former Special Education student, so the scaffolds and supports I used throughout this unit I feel are appropriate for learners that need extra support.

Extensions: If I were teaching this unit to a regular classroom I would have removed the supports for Close Reading, questioning, and the experiment at a little bit faster rate for those that could complete these skills without assistance. However, if I had students that were needed extensions beyond this, I would have encouraged them to choose their own research experiment relating to plants and monitor them as they completed an inquiry investigation to report to their peers.

Assessments

Formative – Group discussions and text dependent question answers in journals

- Reading standards: ELA-Literacy.RI.3.1 and ELA-Literacy.RI.3.3
 - Writing standard: ELA-Literacy.W.3.2
- Plant parts diagram and Experiment Lab Notes
- Reading standard: ELA-Literacy.RI.3.3
 - Writing standards: ELA-Literacy.W.3.2 and ELA-Literacy.W.3.7

Summative – Kid friendly Brochure - How to grow seeds


- Reading standard: ELA-Literacy.RI.3.3
 - Writing standard: ELA-Literacy.W.3.2
- Presentation of lab information and brochure to homeroom class
- Speaking and Listening standard: ELA-Literacy.SL.3.4

Informal – Decoding meaning of prefixes, suffixes, word roots and multisyllabic words in context as we read. Ongoing assessment.

Rubric/Scoring Guide - Attached

Rubric: 3rd Grade - SL.3.4 Speaking and Listening

CCSS.ELA-Literacy.SL.3.4 Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.

<div>  SL.3(4-6) </div> Presentation and Knowledge of Ideas				
	Exceeding (N/A)	Meeting (N/A)	Approaching (N/A)	Emerging (N/A)
SL.3.4 Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.	Exceeding Reports on a topic in an organized manner and include descriptive details that support main idea or themes. Speaks with clarity, keeps appropriate pace and engages audiences.	Meeting Gives more than 3 appropriate facts and more than 3 relevant details. Speaks with clarity and keeps an appropriate pace.	Approaching Gives 2-3 appropriate facts and 2-3 relevant details. Speaks with some clarity and keeps an appropriate pace most of the time.	Emerging Gives little to no appropriate facts or relevant details. Does not speak with clarity and does not keep an appropriate pace.

Comments:


Michelle Larson

Student: _____

Grade: _____

Rubric: Informational Writing

Information Texts: CCSS.ELA-Literacy.W.3.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

 Informational Writing					
	Exceeds 4 pts	Meets 3 pts	In progress 2 pts	Does not meet 1 pts	
Ideas	Exceeds I have written clearly on the topic, it includes facts and details about the topic. I have included strong examples and facts that are completely developed. It shows that I fully understand the topic and taught the reader something new.	Meets My writing shows that I have an understanding of the topic, but some facts or examples are not developed. I have a few details, but they are not fully developed. I could elaborate and teach the reader more about my topic.	In progress My writing shows that I have some understanding of the topic, but did not include facts or examples to developed my topic. Details include basic information that most people already know. I did not teach the reader about my topic.	Does not meet My writing doesn't show that I understand the topic, because I didn't give any meaningful facts or examples. I did not teach the reader.	
Organization	Exceeds I have a clear topic sentence, with supporting details, and a closing sentence for each paragraph. I have written in a order that fits my topic. I included a developed conclusion.	Meets My writing is organized with a topic sentence, but has little supporting details. Information is not in an order that is easy to follow. I included a conclusion.	In progress My writing shows that I tried to organize my ideas, but it's missing one of the elements: topic sentence, supporting details, or conclusion and is not in a logical order.	Does not meet My writing isn't organized in a meaningful way to teach the reader new information.	
Style	Exceeds The writing is in my own words, and I have used strong vocabulary to keep the reader engaged. Language and tone are appropriate for informational writing.	Meets The writing is in my own words, but my sentence structure is simple. I used vocabulary to keep the reader engaged. Language and tone is appropriate for informational writing.	In progress The writing is partly in my own words, but parts of it have been copied from other sources. Language or tone is basic & flat.	Does not meet The writing is not in my own words. It has been copied from other sources. Language and tone is basic & flat.	
Mechanics	Exceeds There are no errors in capitalization, punctuation, and/or spelling. Subject and verb tense is correct.	Meets There are a few errors in capitalization, punctuation, spelling and/or in subject and verb agreement. The errors do not make my paper hard to read.	In progress There are several errors in capitalization, punctuation, and/or spelling. The errors make my paper hard to read. Several mistakes in subject and verb agreement.	Does not meet There are many mistakes in capitalization, punctuation, and/or spelling. My paper is hard to read.	

Comments:

One week before unit starts – Plant seeds for experiment

Generate documents of all of the questions for our journals. Cut and paste into journal for reference, and to highlight stems for complete sentences.

WEEK 1 - We read, discuss, answer questions, and write together as a group.

Day 1

KWL-(What I *think* I Know, What I want to Know, What I Learned – avoid misconceptions on Know column)
Images Intro – Questions (Show Images and ask the following questions recording their answers on the KWL)
What does a plant need to survive?

- Introduce journal for notes, vocabulary, questions, and lab reports

Prior Knowledge Quiz

1. Can a plant survive anywhere? (Images)
2. Can a plant survive in the arctic?
3. Can a plant survive in the desert?
4. Can a plant survive on the moon?
5. What parts does a plant have?
6. Do they all have a function?
7. What happens if a plant dies?

Essential Question –

***What does it mean to survive?**

Focus Questions Orally, but modeling complete sentence stems.

- *What needs does a plant have in order to survive in its environment?
- *What can be done to maximize the growth of a plant?

Day 2

Read – “*Plants and Their Parts*” – Section I

We read together out loud. – Modeling Close reading strategies* and stopping to discuss.

*The close reading procedure is attached. This first time, we will read sentence by sentence and circle scientific and important words and underline words we don’t know. We will use context clues, word roots, prefixes and suffixes to determine meanings and make connections. I will ask them what they are thinking and then I will tell them my thoughts, connections and understandings and have them write our ideas in the margins. As a group we will highlight important ideas and concepts.

Questions: (JOURNALS) Ask, discuss, and then write – (Copies pasted in journals. Lots of modeling complete sentence responses)

- ✓ Why do you think plants are different colors and sizes? (Stem: I think.....because...)
- ✓ What things do all plants need? How is this different for animals? (In Text)
- ✓ What can plants do that animals cannot? Why would this be important? (In Text)
- ✓ What other systems do you know about? (Relate this to a routine in their classroom and how it makes things function smoothly.)

Vocabulary: (JOURNALS)

- Students will read words in text and discuss as a group to see if we can determine meaning from context. We will come up with a friendly definition, write it in our journals and then either draw an illustration, or write a sentence that will help us remember what the word means.

Review – flowers, seeds, leaf, stem, fruit

Teach – survive, system, root (intro), environment

Day 3

Video Segment – Discover Education – State Website – *TLC Elementary School: What is a Living Thing?*
3 min. 31 sec.

Part 1 – Basic Needs – skip section on reproduction 2:32 – 2:45 – Highlight info on O₂ and CO₂ at 2:02 pause and discuss

Note catcher is attached w/teacher and student copy

Slow down and really debrief video – Go over 7 basic life processes and create poster of how plants use CO₂

Day 4

Quick Write – “From the video I learned _____. I would like to know more about _____.”

Read – *Plant Parts* (Reading a-z book for vocabulary) ATTACHED PDF file

We read together out loud. – Modeling reading for meaning of words and stopping to discuss. Same procedure as Day One.

Vocabulary: (JOURNALS) – This will still follow the same in context format as Day 1.

Review – label, flower, stem, petals, leaf, seeds, peel, bean, soil, trunk, branches

Teach – dissect, observations, bud, pulp, twig, veins, sprout, roots

Begin a vocabulary flip book of the plant parts. Write the function on each part of plant. *Finish Day 9 and 11

Day 5

Go over safety procedures with students. We will work with partners, so I will have four groups and will be able to monitor closely.

Dissect plants with a partner and label parts using book as a reference as needed (scaffold)

In our journals write a brief description and any big ideas that we take away from the dissection.

Day 6

Review dissected plants and labels with a partner. In journal, record parts and discuss their purpose for the plant. – What questions do you still have about the parts’ functions? Record questions in journal.

Group discussion – What parts do we know the function of? What do we still need to know? Refer to KWL chart and fill in questions

Image – Discovery content folder. Apple and gourd to frontload today’s reading.

“We know that plants make food for us (students give examples), but what does a plant eat?”

Read – “*Plants Make Food*” – Section 2

1st Read - We read together out loud. – Modeling Close reading strategies, paying close attention to decoding multisyllabic words, vocabulary, and stopping to discuss.

2nd Read – Students reread text independently to review before questions.

Questions: (JOURNALS) Ask, discuss, and then write

- ✓ What parts of a plant help it make food? What do the parts do? (In Text) **Plants use...**
- ✓ Why do plants need animals? And why do animals need plants? (Prior knowledge of O and CO₂ from video Basic Needs, Day One)

Vocabulary: (JOURNALS)

Review – system, illustrate, leaves, roots, stem

Discuss – oxygen and carbon dioxide (relate to video day1)

Day 7

Planted bean seeds and plants. Two per student and extras so that they can record changes and differences.

Write baseline data in our journals. Begin Day 8 reading if time.

Day 8

Read – “*Plant Roots*” – Section 3

1st Read - We read together out loud. – Modeling Close reading strategies and stopping to discuss, but rely more on the students’ ideas and thoughts for the annotating in the margins.

2nd Read – Students reread text independently to review before questions.

Questions: (JOURNALS) Ask, discuss, and then write

- ✓ Why do plants need roots? What things do the roots do that are so important? (In Text)
- ✓ The text compared the roots of plants to the branches of a tree. Why do you think the author did this? How did it help you understand? (Thought Question-Making Connections)

Day 9

Draw an illustration of a root system in your journal

Vocabulary: (JOURNALS)

Review – system, illustrate, branches

Teach – roots,

- As a group, create a poster that shows the parts of plants. [Continue vocab flip book of plant parts.](#)

Day 10

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Read – “*Stems and Leaves*” – Section 4

1st Read - We read together out loud. – Modeling Close reading strategies and stopping to discuss. Same procedure as Day Four.

2nd Read – Students reread text independently to review before questions.

Questions: (JOURNALS) Ask, discuss, and then write

- ✓ [Why is the stem important to the plant?](#) (In Text)
- ✓ How do stems adapt to the environment? (In Text)
- ✓ Why do you think that plants have different types of leaves? (How could the plants environment effect leaf type?) [Discuss this after we write.](#) (Thought Question – Making Connections)

Vocabulary: (JOURNALS)

Review – stem, roots, leaves, environment

Day 11

Go back to Vocabulary book [Plant Parts](#), Flip book and talk about vocabulary to review – Use the computer to search for leaf type images and sketch in Journal.

[Video Segment](#) – Discovery Education My Content folder – [How Plants Grow: Plant Parts](#) to review

Note catcher attached

[Finish Flip book](#)

[WEEK 3](#) - We read with buddies, discuss information as a group, write answers to questions with a buddy and then discuss answers as a group. – [BEGIN PLANT EXPERIMENT](#) [Pick up the pace](#)

Day 12

Read – “*Growing a Seed*” – Section 5

1st Read - Students read 2 times with a buddy using close reading strategies. Read once for decoding, scientific words and to try to define new words in context and again to make notes in margins and highlight important ideas.

2nd Read – Group reading and discuss

3rd Read – Students retell the main ideas to a buddy to review before answering their questions.

Questions: (JOURNALS) Ask, discuss with buddy then **write**

- ✓ Where are new seeds formed? (In Text)
- ✓ The passage talks about the petals of flowers. It says they are brightly colored to attract birds and insects. Why is this important? How do you know? (In Text, but not “right there” - Making Connections)

Vocabulary: (JOURNALS)

Review – flowers, petals, seeds

Teach – pollinate, pollen

Hand out the posters on parts of a plant. Have each child read the information and become an expert to teach the rest of the class. Use the website to have the kids come up and practice telling about their information.

ATTACHED PDF file

Website <http://www.sciencekids.co.nz/gamesactivities/lifecycles.html>

Go over the website with the kids on the projector and review the parts of the plant

Let them use the interactive website to sort the parts of the plant.

Posters are attached. (pdf file)

Video Segment – Discover Education – State Website – *Plant Life Cycles: Pollination* 1:05 – Record Life Cycle of Plant in Journal after watching

Day 13

Read – “*Scattering Seeds*” – Section 6

1st Read - Students read 2 times with a buddy using close reading strategies. Read once for decoding, scientific words and to try to define new words in context and again to make notes in margins and highlight important ideas.

2nd Read – Group reading and discuss

3rd Read – Students retell the main ideas to a buddy to review before answering their questions.

Questions: (JOURNALS) Ask, discuss with buddy then **write**

- ✓ List the ways that seeds can be scattered. (In Text)
- ✓ What makes dandelion seeds travel on the wind? (In Text)
- ✓ Think of the video clip yesterday, how is the process of moving pollen the same as scattering seeds? How is it different? (In Text and Making Connections to Video)

Vocabulary: (JOURNALS)

Review – pollen, seeds, observations,

Review the scientific method song. <http://www.livebinders.com/play/play?id=346876>

Discuss our experiment and what is going to happen. Begin to observe plants under the grow light.

- Lab notes Day 1 – Worksheet 2 ATTACHED PDF file

Play sorting game on computer (from Day Six) for parts of a plant if time.

Day 14

Pretest with a partner activity – Students will complete the attached(ATTACHED PDF file) “Quiz” with a partner using the word bank before viewing the video. Then as they watch the video they will check their answers and record correct responses as needed. I will pause the video as the questions come up and we can discuss any misconceptions.

At the end of the video we will fill in the “Three confirmed and Three new knowledge” responses as a class.

Video – *Magic School Bus Goes to Seed* – Pollination and scattering seeds.

Watch video, check notes from closed captioning with teacher pausing to allow time to write.
Class discussion of plant life cycle noticed in video. Use MSB summary paper (ATTACHED PDF file) to summarize the video.
Discovery Education –My Content Folder – Worksheets and summary paper attached.

Review the scientific method song. <http://www.livebinders.com/play/play?id=346876>
Make plant observations and record in journals – The students will choose and record the variable to change in their experiment.

Day 15

Show short [video segment](http://www.livebinders.com/play/play?id=346876) of young plants <http://www.livebinders.com/play/play?id=346876>
✓ What do you see happening in the video? Use See Think Wonder worksheet - attached

Read – “*Young Plants*” – Section 7

1st Read - Students read 2 times with a buddy using close reading strategies. Read once for decoding, scientific words and to try to define new words in context and again to make notes in margins and highlight important ideas.

2nd Read – Group reading and discuss

3rd Read – Students retell the main ideas (review meaning of main idea mini lesson) to a buddy to review before answering their questions.

As a group we will write down the steps that a seed goes through. Make a poster.

Questions: (JOURNALS) Ask, discuss with buddy then **write**

- ✓ What does a seed need in order to start germinating? (In Text)
- ✓ What conditions do you think the seed needs? What would make the seed grow faster or slower? (Thought Question – Prior Knowledge)
- ✓ Think about our essential question and focus questions – (Jot ideas in our journal)

Vocabulary: (JOURNALS)

Review – seeds, roots, stem, observations

Teach – germinate, seed leaf, seedlings, hypothesis

Record baseline data for plants. Record our hypothesis and **begin plant experiment** variable change and then start bean seeds.

Day 16

Pretest with a partner activity – Students will complete the attached (ATTACHED PDF file) “Quiz” with a partner using the word bank before viewing the video. Then as they watch the video they will check their answers and record correct responses as needed. I will pause the video as the questions come up and we can discuss any misconceptions.

At the end of the video we will fill in the “Three confirmed and Three new knowledge” responses as a class.

Video – The Magic School Gets Planted –

Watch video, check notes from closed captioning with teacher pausing to allow time to write.

Class discussion of plant life cycle noticed in video. Use MSB summary paper (ATTACHED PDF file) to summarize the video (same as Day Eight)

Discovery Education –My Content Folder - Worksheets and summary paper attached.

Vocabulary: (JOURNALS)

Review – plant parts and life cycle vocab from Vocabulary Chart

Teach - hypothesis

Discuss experiment process with students. Sing and discuss the scientific method song. Ask them to start deciding which factors they want to change for their experiment. Discuss options and record ideas on a chart.

- Worksheet 1 on what plants need to grow. (ATTACHED PDF file)
- Students will draw life cycle of a bean seed in their Journals.

Introduce <http://www.sciencekids.co.nz/gamesactivities/plantsgrow.html>

Students start practicing keeping the plant alive by balancing the amount of water and sunshine/heat.

Make observations of our plants, how they are growing, any changes noticed? Observe bean seeds we planted yesterday.

WEEK 4 - We read independently, read as a group, discuss information with a buddy, write answers independently and then share with the group to generate more discussion.

Day 17

Observe bean seeds and dissect one to observe seedlings

Observe plants and make observations of changes noticed in our journal

Draw Life Cycle of a bean seed in our journals

Use Worksheet (ATTACHED PDF file) as a template for a class poster - Using our knowledge from our book, brainstorm list of factors that could stop growth – CAUSE and EFFECT

Discuss Cause and Effect relationships and how they relate to scientific experiments.

Vocabulary: (JOURNALS)

Review – observations, hypothesis, anchor chart, variable, change

Teach – Cause and Effect

Read – “*Deciduous and Coniferous*” – Section 8

1st Read - Students read independently using close reading strategies. (Before reading, ask students to be looking for characteristics of the two types of trees.)

2nd Read – Group reading and discuss with a buddy to review before answering questions

Teacher collects lab notes and journals to check questions and see notes.

Questions: (JOURNALS) Ask, **write then discuss**

- ✓ Create a Venn Diagram (vertically) as a group to compare and contrast deciduous and coniferous trees. Have students give me information from the text. (Class Poster)
- ✓ If you were out in a group of trees, explain how you would be able to tell the types of trees apart. (In Text and Making Connections)
- ✓ Nature walk on the playground – What type of tree is this? How do you know? – Sketch the two types of trees in your journal.

Vocabulary: (JOURNALS)

Review – Vocabulary Chart, compare, contrast, Venn Diagram

Teach – deciduous, coniferous

Observe plants and make observations of changes noticed.

Day 18

Read – “*Cones*” – Section 9

1st Read - Students read independently using close reading strategies.

2nd Read – Group reading and before answering questions

3rd Read – To cite textual evidence while answering questions.

Questions: (JOURNALS) Ask, **write then discuss**

- ✓ Why did the author include the third paragraph? What hints might she be giving us? (In text and Making Connections)
- ✓ What things are necessary for a coniferous tree to survive in its environment? (In Text)
- ✓ Find and cite two examples of how the process on this page is similar to the other plant life cycles we have discussed in our reading. (In Text but not right there)

AUDIO file – Discover Education – My Content – *Elementary Science: Non-flowering plants* – Take notes without a note catcher to see what important ideas they heard

Fill in life cycle on article

Vocabulary: (JOURNALS)

Review – germinate and Vocabulary Chart

Observe plants and make observations of changes noticed.

Day 19

Students will make observations and record data in their lab journals.

- Complete drawings of two plants and description of what happened to plants in journal
- Top Hat Strategy to Compare the two plants – Write conclusion statement about scientific experiment (This is attached with a description on the second page)

Begin to look at what a plant needs to survive. Have an essential question discussion, review KWL and note taking to begin project.

Use the Reading a-z KWL template (ATTACHED PDF file) to have the students write down what they want to share with their classmates and people at home. Have them use our chart from the frontloading activity as a guide.

Day 20

Read – “*Plants Over Time*” – Section 10

1st Read - Students read independently using close reading strategies.

2nd Read – Group reading and before answering questions

3rd Read – To cite textual evidence while answering questions.

Questions: (JOURNALS) Ask, **write then discuss**

- ✓ How do we know about plants from the past? (In Text)
- ✓ What does the author mean when she says “without plants, no other living things would be able to exist on Earth”? (Thought Question – Making Connections)
- ✓ Why do plants and animals need each other to survive? Why is this so important to us? (In Text and course of the unit)

Vocabulary: (JOURNALS)

Review – fossils (**possibly check out some from Herrett Center**), extinct, and Vocabulary Chart

Students complete their chart and class KWL Chart and discuss

- Worksheets 3 and 4(ATTACHED PDF file)

Day 21

Discuss the environmental needs of plants and how they have adapted to their environments.

Video Segments: Discovery Education – *Plants and Photosynthesis – Where Plants Live (1:56)*

How Plants Adapt (3:59)

Students will take notes they think are important

Plant Adaptations (0:53)

Class discussion about environment

Use Cause and Effect knowledge to discuss reasons plants survive in various environments with a partner.

Respond in Journal to videos and prompt:

- How have the parts and systems of some plants adapted so that they can survive in their environments? Give two examples.

Review Essential Question-

***What does it mean to survive?**

Focus Questions: *What needs does a plant have in order to survive in its environment?

 *What can be done to maximize the growth of a plant?

Compare and contrast the needs of plants vs. humans. Use Top Hat Strategy again.

WEEK 5



We will analyze our experiment, write our brochure and prepare our speech.

I will show students examples of brochures and “How To” informational handouts. I will relate it back to their earlier work in the year writing how to paragraphs. I will use the RAFT format for them to see who they are addressing and why.

Role – Scientific expert


Audience – classmates

Format – Speech

Topic – “How to help a plant survive in its environment...”

I also plan to modify the attached rubrics into kid friendly terms (**with the kids’ help**) so that the students can go through their work before presenting and turning it in and self-reflect. I want them to determine whether or not they feel their brochure is exceeding or meeting the criteria and whether or not their class presentation was well done. I have spoken to a local nursery and hardware store, and if the students submit quality work they are willing to let us put the brochure in their places of business.

Plant Unit Close Reading

➤  **Circle** scientific words
and words you think are
important

➤ Underline words you do
not know

➤ Write your thoughts in
the margins

➤  **Highlight** important
concepts and ideas

My
connections
with other
things and
ideas!



Plants and Trees Growing

By Kara Race-Moore

Plants and Their Parts

Plants are amazing! Plants grow all over the Earth. There are many different types of plants. Plants are many different colors and sizes. They make many different types of flowers and seeds. There are many things that make plants different. Still, they all have several important things in common.

Like animals, all plants need food, water, and space to grow. One of the reasons animals need space to move around is to find food. Plants don't need to find food. They are able to make their own food, using their special parts.

Plants are a system of parts. A system is a set of parts that work together. Plants have root, leaf, and stem systems.

All of a plant's systems work together to help it make food and oxygen. The plant's systems also help carry food from part to part.

Plants also make flowers and fruit. These systems can even make more plants.

Plants Make Food

A plant's parts work together to make it grow. Plants can make their own food in order to live and grow. Different parts of the plant do different things to help the plant grow.

Roots get water from the ground. The roots and stem bring the water to the plant's leaves through tubes. The leaves bring in carbon dioxide from the air. It enters through tiny

holes on the bottom of the leaf. The carbon dioxide is mixed with the sunlight that falls on the leaves and with the water taken from the stem. Using the water, sunlight, and carbon dioxide, a plant's leaves make sugar and oxygen.

The plant uses the sugar to grow. It lets the oxygen out through tiny holes on the undersides of the leaves. Many other living things use the oxygen that plants make.

Plant Roots

Roots make up an important plant system. The roots of a plant hold it in the ground and keep it steady. They take water and minerals from the soil to help the plant grow. Some plants also store food in their roots.

There are different types of roots. Carrot roots are a kind of taproot. A taproot grows deep into the soil. Smaller roots, called fibrous roots, grow off the main taproot. These roots are called fibrous roots because they look like slender fibers. People eat the taproots of carrots for food.

As a tree grows taller, its branches grow out farther and farther. Smaller branches grow from the tree's main branches at the same time.

Tree roots grow in the soil in a similar way. They grow out as far as they can to get as much water and as many minerals as possible.

Inside the root are tubes. The tubes take the water and minerals to the stems and leaves.

Stems and Leaves

The stems support and connect all of the plant systems. Stems bring water and minerals from the roots to the leaves. Then the stems bring the sugars the leaves make back down to the roots to help them grow.

Different plants have different types of stems. Some stems grow thick to protect plants from the Sun. Other stems are covered in sharp

thorns to prevent animals from eating the plants. Ivy stems are thin and flexible. They grow around other objects, such as trees or fence posts, for support.

Plants also have different types of leaves. Many evergreen trees have hard, skinny leaves that look like needles.

Trees, such as oaks and maples, have flat, broad, flexible leaves.

A leaf can be one piece. It can also be made of many leaflets growing off a main vein. A plant's leaves always grow in a pattern.

Growing a Seed

A flowering plant grows from a single seed. Seeds are formed in the flower of a plant. To make seeds, a plant has to be pollinated. A plant will pollinate when pollen gets moved near the center of a flower to a part that makes seeds. Seeds then form in the middle of the flower.

A flower is made up of several parts. Its outside parts are called petals. Petals are often brightly colored to attract birds and insects. This helps with the pollination process. The wind can also carry pollen to pollinate a plant.

Scattering Seeds

The wind does more than carry pollen to a plant's flowers. It can also blow seeds away from the parent plant. Dandelion seeds have a parachute design that allows the wind to blow them far and wide.

Water can carry seeds that have strong seed coats. Those seeds can then grow in other

places. Wind and water bring many seeds to islands that are far out in the sea.

Animals can also move seeds and pollen. Pollen and seeds can stick to an animal's fur or feathers when it brushes against a plant or eats its nectar. Those seeds then scatter as the animal walks or flies around.

Animals can also scatter seeds when they eat a plant's fruit. The seeds pass through the animals' bodies after they eat the fruit.

Young Plants

Most plants start out as seeds. Different plants have different ways of making their seeds. Seeds start to germinate when the plants inside them break through their seed coats. A seed needs the right temperature and conditions to start germinating. To germinate means to begin to grow. The developing plant uses food that is stored inside the seed's seed leaf to grow.

New plants are called seedlings. Seedlings quickly grow roots and a stem. The roots and the stem allow seedlings to start making their own food after they have used up the seed leaf's food.

Seedlings start getting bigger, and soon their first true leaves start making food. After a while, seedlings make more leaves.

Deciduous and Coniferous

Trees are a kind of plant. Two types of trees are deciduous trees and coniferous trees. The leaves on deciduous trees fall off every year when the weather gets cold. Deciduous trees grow new leaves in the spring, when the weather gets warm again. Coniferous trees shed and replace their leaves throughout the year.

Deciduous trees are flowering plants. They grow their seeds inside things like fruits and

nuts. Oak, apple, and maple trees are deciduous trees.

Coniferous trees do not have flowers. They grow seeds in cones. Pine, spruce, and fir trees are coniferous trees.

Cones

Coniferous trees grow two types of cones. The small cones make pollen. The large cones can

grow seeds. A coniferous tree gets pollinated when the wind blows pollen from the small cones to the large cones.

The seeds inside the large cones ripen. Cones with ripe seeds fall to the ground. Then the seeds can germinate in the soil.

If the seeds get the right
amount of water, space, and
sunlight, they grow
into new trees.

Later, the new trees will make their own large and small cones. When that happens, the life cycle of the evergreen trees will start again.

Plants over Time

Some kinds of plants have been around for a long time. Ferns were around when dinosaurs were alive. Ferns still live all over the Earth, growing and germinating new ferns. Some kinds of plants no longer exist and will never live on Earth again. Those plants are now extinct. Any living thing that once lived on Earth but never will again is extinct.

We can learn about extinct plants by studying their fossils.

A fossil is the remains of traces of an animal or plant from a long time ago. Fossils get left behind in earth or rock.

A fossil can be a footprint a dinosaur make in mud that over time hardened into rock.

Or it can be a plant leaf that has been pressed into layers of mud. After millions of year, the mud hardens into rock, which contains a print of the plant leaf.

Plants have changed over time. The earliest plants had spores instead of seeds. Spores are tiny, round, and much smaller than seeds.

Plants have changed as the Earth has changed. Coniferous trees now grow in many places. Flowering plants have been on Earth for a much shorter time than plants with spores. But they can now be found almost anywhere.

Today there are many different types of plants. Without plants, no other living things would be able to exist on Earth. Plants make the sugars that animals use as food to eat and grow.

Plants turn carbon dioxide into the oxygen that we breathe. They make seeds for new plants with cones or flowers, and often use animals, wind, and water to help them reproduce.

Now, after reading this book, you know the facts. Plants are amazing!

TLC Elementary School: What is a Living Thing? - Part 1 Basic Needs

Guiding question: (Quick write)
How do you think scientists define life?

Ability to perform the seven basic life processes

(0:39) – What do bison and prairie grass have in common?
(Think-write- share)

Student ideas – move, food, etc.

(0:53) – What basic needs do we have as humans? (Group discussion and write answers)

Generate class ideas

(1:17) – What are the 7 basic life processes?

1. Movement
2. Sensitivity
3. Respiration – Pause at 2:02 and discuss O₂ and CO₂
4. Nutrition
5. Growth
6. Excretion
7. Reproduction

(3:04) – According to the video, how do we explain the difference between living and non-living things? (Think-pair-share)

Ability to perform all of the seven functions

(3:11) – All living things also depend on their environment. The better adapted they are to their surroundings, the greater their likelihood for survival.

What does the narrator mean by this? (Class discussion)

(3:31) – Where are living organisms found? (Class discussion)
Everywhere

After watching the video, go back to the guiding question: How do you think scientists define life? Did you write down things

that were in the video? Share with a partner and then together talk about how you would define life. (Group share)

TLC Elementary School: **What is a Living Thing? -
Part 1 Basic Needs**

How do you think scientists define life?

What do bison and prairie grass have in common?

What basic needs do we have as humans?

What are the 7 basic life processes and their description?

1. _____ -

2. _____ -

3. _____ -

4. _____ -

5. _____ -

6. _____ -

7. _____ -

According to the video, how do we explain the difference between living and non-living things?

All living things also depend on their

_____. The better adapted
they are to their surroundings, the greater their
likelihood for _____.

What does the narrator mean by this?

Where are living organisms found?

Describe them and what do they do?

ROOT:

STEM:

LEAVES:

What are stomata and why are they so important?

Sketch an example.

Name: _____

Directions: As we watch the video clip, record your thoughts. Remember to put them in order so we can discuss them as a group.

I See...	I Think...	I Wonder...

PLANT EXPERIMENT TOP HAT COMPARISON

Plant A		Criteria	Plant B
	SIZE		
	COLOR		
	APPEARANCE		
	LEAVES		
	STEM		
	ROOTS		

How are the two plants the same?
How are they different? What
conclusion can you draw from your
experiment results?

Description:

Have the students use the model to look at their two plants and record the criteria for each plant.

Comparison:

Have the students look for similarities and differences. I will model this for the students for the first criteria.

Conclusion:

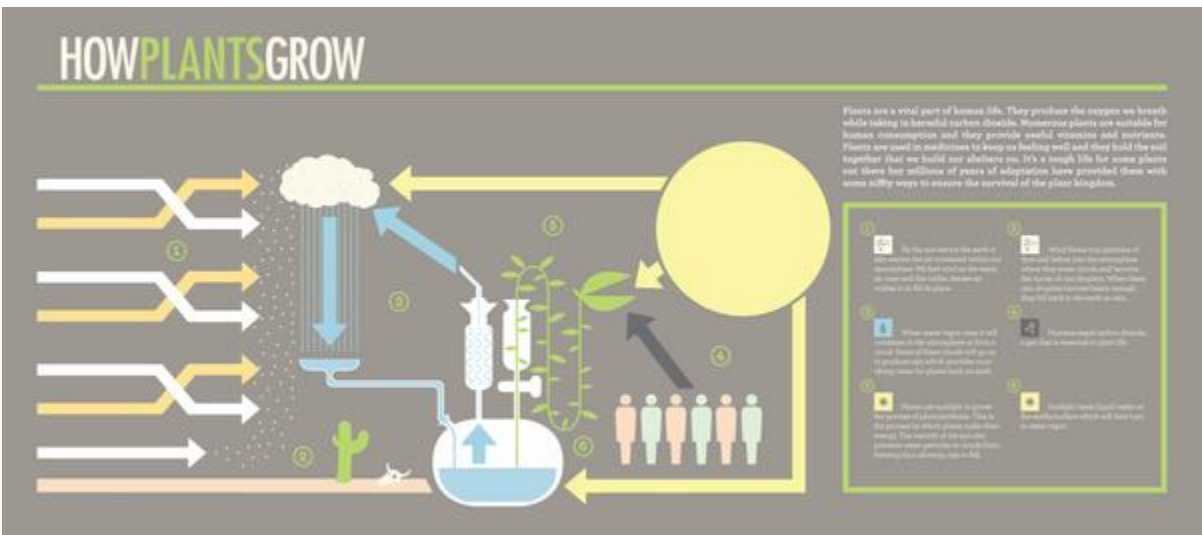
Have a discussion and ask questions about their "Top Hat". I will help my students draw conclusions to write on their paper.

Application:

Have the students use their comparison chart to create a brochure for other students about "How to Grow a Healthy Plant"



Examples of brochures and infographics to show my students.



Questions for student journals